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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,506	08/29/2000	Sunao Kakizaki	Hitachi-0012	8562

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EXAMINER

LI, SHI K

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 10/27/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/650,506

Applicant(s)

KAKIZAKI ET AL.

Examiner

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Drawings

1. Figures 12A, 12B and 13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: "Fig.12" in page 2, lines 15 and 20 should read "Fig. 12A". "Fig. 13" in page 2, lines 17 and 18 should read "Fig. 12B". "2156" in page 6, line 25 should read "215b"

Appropriate correction is required.

Claim Objections

3. Claim 19 is objected to because of the following informalities: the phrase "transmission liens" in line 7 of the claim should read "transmission lines". Appropriate correction is required.

4. The numbering of claims is not in accordance with 37 CFR 1.126. The claim after claim 24 is misnumbered as claim 23.

Misnumbered claims have been renumbered such that the second claim 23 and claims 25-26 have been renumbered as claim 25-27, respectively.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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6. Claims 2-4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 2-4 recite the limitation "reversing the isolated second/fourth optical transmission line". However, the specification fails to teach method for reversing an optical transmission line.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-4 recite the limitation "reversing the isolated second/fourth optical transmission line". It is unclear about what is being reversed for an optical transmission line. In the following prior art rejections, it is assumed, based on the Examiner's understanding from the specification, that "reversing the isolated second/fourth optical transmission line" means "restoring the isolated second/fourth optical transmission line so as to receive and deliver traffic", i.e., the optical transmission line is no longer isolated after the restoring operation.

9. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 13 recites the limitation "[t]he system" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claim 18 recites the limitation "[t]he system" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites "a two two-in-two-out optical switch". It is unclear whether the phrase means "one two-in-two-out optical switch" or "two two-in-two-out optical switches".

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1, 5, 10, 14 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (U.S. Patent 6,414,765 B1).

Li et al. discloses in FIG. 2A an optical network comprising a pair of connections—primary 1 and primary 2, and extra 1 and extra 2—between node A and node D. Li et al. further discloses in FIG. 2B the structure of node A. FIG. 2B includes switching devices 34 and 66 for

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blocking traffic to and from extra 1 when a fault has been detected in the working path for primary traffic.

16. Claims 1, 10 and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Johnson (U.S. Patent 5,903,370).

Johnson discloses in FIG. 7 an optical network with four (4) nodes. Johnson shows in FIG. 8 the details of each node. Between a pair of nodes, there are first transmitting port 70 and first receiving port 71 for high-priority traffic, second transmitting port 126 and second receiving port 127 for low-priority traffic, switches 121-124 for isolating the pre-emptive traffic when failure occurs, switches 65-68 for protection switching. Johnson also teaches in col. 7, lines 46-49 to monitor the presence or absence of light for detecting a fault.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 1-4, 10-13 and 19-24, with the assumption that claim 13 depends on claim 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over ITU-T G.841 (ITU-T G.841, "Types and Characteristics of SDH Network Protection Architectures", October 1998, pp. 11 and 17) in view of Uemura et al. (U.S. Patent 6,434,288 B1).

ITU-T G.841 discloses in FIG. 5-6 a functional modal for generic 1:1 linear trail protection in non-revertive operation mode. FIG. 5-6 comprises four (4) optical fibers connecting two sites. The difference between ITU-T G.841 and the claimed invention is that

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ITU-T G.841 does not include line isolators to remove traffic from a protection fiber. Uemura et al. teaches in col. 4, line 65-col. 5, line 6 that it is desirable to use a gate to isolate the protection fiber to avoid erroneously connect the primary traffic to a receiver for extra traffic. One of ordinary skill in the art would have been motivated to combine the teaching of Uemura et al. with ITU-T G.841 because delivery of data to the wrong destination causes confusion and raises security issues. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include gates in the network terminals to isolate the protection fiber for avoiding erroneously connecting traffic to the wrong destination, as taught by Uemura et al., in the 1:1 non-revertive linear trail protection scheme because delivery of data to the wrong destination causes confusion and raises security issues.

Regarding claims 3-4 and 12-13, ITU-T G.841 includes traffic for both directions between the two sites.

Regarding claims 20, 21 and 23, the protection matrix connection (MC_p) of FIG. 5-6 of ITU-T G.841 can be viewed as a four-in-four-out switch or two two-in-two-out switches.

Regarding claim 22, Uemura et al. teaches in FIG. 5 a configuration using one one-in-two-out optical switch 21, two two-in-one-out switch 12 and 22, and an optical splitter 11.

Regarding claim 24, Uemura et al. teaches in col. 4, line 65-col. 5, line 6 the use of optical gates.

19. Claims 6, 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (U.S. Patent 6,414,765 B1) in view of Uemura et al. (U.S. Patent 6,434,288 B1).

Li et al. has been discussed above in regard to claims 1, 5, 10, 14 and 19. The difference between Li et al. and the claimed invention is that Li et al. does not use an optical gate to block

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the traffic. Uemura et al. suggests in col. 5, lines 1-2 the use of optical gate to block traffic on the protecting path. One of ordinary skill in the art would have been motivated to combine the teaching of Uemura et al. with the optical network of Li et al. because optical gates are fast. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use optical gate for blocking the traffic, as taught by Uemura et al., in the optical network of Li et al. because optical gates are fast.

20. Claims 7-8, 16-17 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (U.S. Patent 6,414,765 B1).

Li et al. has been discussed above in regard to claims 1, 5, 10, 14, and 19. The difference between Li et al. and the claimed invention is that Li et al. does not use an electronic-to-optical converter or an optical-to-electronic converter for blocking the extra traffic. As indicated in FIG. 2B of Li et al., the receiver Rx (optical-to-electronic converter), transmitter Tx (electronic-to-optical converter) and the switch (34 or 66) are in serial connection. It is well known in the art that disabling any component of a path consists of a plurality of serially connected components blocks the path. That is, disabling the Tx, the Rx or the switch has equivalent effect for blocking the extra traffic. Where the claimed differences involve the substitution of interchangeable or replaceable equivalents and the reason for the selection of one equivalent for another was not to solve an existent problem, such substitution has been judicially determined to have been obvious. See *In re Ruff*, 118, USPQ 343 (CCPA 1958). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the switch by disabling the Tx or the Rx in the optical network of Li et al. to block the extra traffic when a fault has been detected in the path for carrying primary traffic.

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21. Claims 9, 18 and 27, with the assumption that claim 18 depends on claim 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over ITU-T G.841 and Uemura et al. as applied to claims 1-4, 10-13 and 19-24 above, and further in view of Taketomi et al. (U.S. Patent 5,978,354).

ITU-T G.841 and Uemura et al. have been discussed above in regard to claims 1-4, 10-13 and 19-24. The difference between Johnson and the claimed invention is that Johnson does not teach a storage unit to store the current configuration. Taketomi et al. teaches in FIG. 8 and col. 17, lines 31-40 to store the current configuration in memory for keeping track of which path is carrying high priority traffic. One of ordinary skill in the art would have been motivated to combine the teaching of Taketomi et al. with the modified optical network of ITU-T G.841 and Uemura et al. because knowing whether a path is carrying high priority traffic is critical in a non-revertive operating mode to decide whether switching is necessary when a fault has been detected with the path. Protection switching only occurs when the path is carrying protected high priority traffic. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include memory unit for storing the current configuration, as taught by Taketomi et al., in the modified optical network of ITU-T G.841 and Uemura et al. because knowing whether a path is carrying high priority traffic is critical in a non-revertive operating mode to decide whether switching is necessary when a fault has been detected with the path.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 703 305-4341. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

skl


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